

Notice of Allowability

Application No.

09/656,541

Examiner

Ayal I Sharon

Applicant(s)

BEAUSOLEIL ET AL.

Art Unit

2123

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 9/7/04.
2. ☒ The allowed claim(s) is/are 1-6.
3. ☒ The drawings filed on 07 September 2004 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of
- Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

Examiner's Notice of Reasons for Allowance

1. The following is an examiner's statement of reasons for allowance. The closest prior art of record is:

- a. Harriman et al., U.S. Patent 6,330,645. (Henceforth referred to as "**Harriman**").
- b. Chang, Hong-Kai et al. "Array Allocation Taking Into Account SDRAM Characteristics". Proc. of the 2000 Asia South Pacific DAC. January, 2000. pp.497-502. (Henceforth referred to as "**Chang**").

2. Examiner finds the following arguments, presented by the Applicants in the Amendment filed on 9/7/2004, to be persuasive (see pp.8-10):

In any event, even if Harriman and Chang were combined, such a combination would lack one or more features of the rejected claims. Claim 1 recites the feature of **setting a latch in said memory controller to halt data transfer between said SDRAM and said processor chip** (claim 1) (emphasis added). The Examiner has stated in part that:

Chang teaches that "Note that two consecutive BA (bank active) commands for different banks must be separated by at least 2 cycles. After an R [read] command is performed, data is ready 3 cycles later. After a BP [bank pre-charge] command is performed, the corresponding bank does not accept any new command for 2 cycles." Examiner interprets the required pauses between commands to correspond to the claimed limitation of "halting" the transfer of data.

(Office Action, 6/3/2004, p. 5)

The cycles described in Chang used in response to the *read* and *bank pre-charge* commands do not describe "**setting a latch in said memory controller to halt data transfer between said SDRAM and said processor chip**" as in claim 1. Harriman addresses data coherency and data request arbitration with large chunks of data. (Harriman, col. 4, ll. 24-29, describing the "head-of-line" blocking problem.) In particular,

Harriman's arbitrator provides round robin arbitration and read write scheduling between clients. (Harriman, col. 6, ll. 47-49) Thus, Harriman's round robin service, indicates that Harriman does not contemplate and does not describe **setting a latch in said memory controller to halt data transfer between said SDRAM and said processor chip** as claimed in applicants' claim 1.

Chang does not disclose this claimed feature either. Chang maps arrays to different memory banks in SDRAM. (Chang, p. 1, col. 2, par. 4) As quoted above, Chang describes cycles inherent with BP and R commands. (Chang, p. 2, col. 2, par. 1) Chang sends commands for new access to the SDRAM without waiting for the completion of the current access. (Chang, p. 2, col. 2, par. 1) Thus, in Chang commands perpetuate the transfer of data into and out of the SDRAM. Chang does not describe **setting a latch in said memory controller to halt data transfer between said SDAAM and said processor chip** as in claim 1.

3. Therefore, independent claims 1 and 2, and their dependent claims 3-6 are allowed.
4. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Correspondence Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ayal I. Sharon whose telephone number is (571) 272-3714. The examiner can normally be reached on Monday through Thursday, and the first Friday of a biweek, 8:30 am – 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kevin Teska can be reached at (571) 272-3716.

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Any response to this office action should be faxed to (703) 872-9306 or
mailed to:

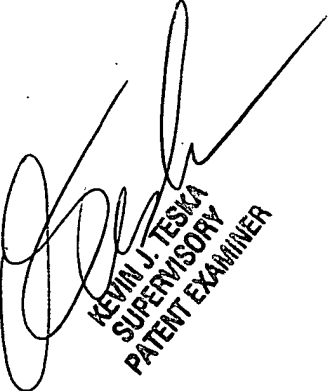
Director of Patents and Trademarks
Washington, DC 20231

Any inquiry of a general nature or relating to the status of this application
or proceeding should be directed to the Tech Center 2100 Receptionist, whose
telephone number is (571) 272-2100.

Ayal I. Sharon

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January 14, 2005



KEVIN J. TESKA
SUPERVISORY
PATENT EXAMINER